Claims

What is claimed is:

1. A control system comprising:

at least one shade control network including at least one motorized shade;

a central processor for controlling the at least one shade control network, the central processor adapted to transmit control signals and database information to the motorized shades of each shade control network and to receive feedback information therefrom; and

a communication interface device for each shade control network, each of the communication interface devices connected between the central processor and a shade control network to facilitate transmission of signals and database information therebetween,

the communication interface device including an information buffer for holding the feedback information from the associated shade control network for independent retrieval by the central processor.

2. The control system according to claim 1, wherein the central processor is further adapted to control at least one control network that does not include a motorized shade.

3. The control system according to claim 2, wherein the central processor is adapted to control a lighting control network in addition to the at least one shade control network.

4. The control system according to claim 2, wherein communication between each of the communication interface devices and the central processor is based on a streaming protocol and communication between the interface device and the associated shade control network is based on an event-based protocol.

5.   The control system according to claim 4 comprising a plurality of shade control networks each connected to a communication interface device.

6.   A method for controlling lights and shades comprising the steps of :

providing a central processor adapted to transmit control signals for setting a device connected to the central processor to a desired intensity level;

connecting the central processor to a lighting system including at least one dimmable load;

transmitting control signals from the central processor to the lighting control system to direct the lighting control system to set the dimmable loads of the lighting system to desired intensity levels;

connecting the central processor to a shade control system including at least one motorized shade; and

transmitting control signals from the central processor to the shade control system to direct the shade control system to set the at least one motorized shade of the shade control system to a desired intensity level, the shade control system adapted to convert the intensity level transmitted by the central processor into a shade position for the at least one motorized shade of the shade control system.

7.   The method according to claim 6 further comprising the steps of:

transmitting a sequence of control signals from the central processor to the shade control system such that the shade control system moves a motorized shade of the shade control system in a series of substantially evenly timed steps of substantially equal distance to simulate a relatively slowly moving shade compared to a normal rate of driven movement for the motorized shade.

8.   The method according to claim 6, wherein a motor speed for the at least one motorized shade of the shade control system is variable and wherein the method further comprises the step of:

transmitting a signal concurrently with the intensity level directing the at least one motorized shade to move to the associated shade position at a desired speed.

9. A method for controlling lights and shades comprising the steps of:

providing a programmable central processor adapted to store preset intensity levels in a database of information for devices connected to the central processor;

connecting the central processor to a lighting control system including at least one dimmable load;

connecting the central processor to a shade control system including at least one motorized shade;

programming the central processor to store preset intensity levels for the dimmable loads of the lighting control system in the database of information;

programming the central processor to store a preset intensity level for the at least one motorized shade of the shade control system in the database of information; and

transmitting a portion of the database of information that includes the preset intensity level for the at least one motorized shade of the shade control system from the central processor to the shade control system, the shade control system adapted to convert the preset intensity levels into preset shade positions.

10. The method according to claim 9 further comprising the steps of:

connecting a user interface to the central processor, the user interface adapted to transmit a command signal to the central processor regarding a selected preset intensity level for the at least one motorized shade of the shade control system in response to a user input; and

transmitting the command signal regarding the selected intensity level from the central processor to the shade control system, the shade control system directing the at least one motorized shade to move to the preset shade position associated with the selected intensity level.

11. The method according to claim 9, wherein a motor speed for the at least one motorized shade of the shade control system is variable and wherein the method further comprises the steps of:

programming the central processor to store a desired motor speed associated with the preset intensity level for the at least one motorized shade of the shade control system in the database of information for directing the motorized shade to move to the associated preset shade position at the desired motor speed; and

transmitting the motor speed with the associated preset intensity level to the shade control system in the portion of the database of information that includes the preset intensity level for the at least one motorized shade of the shade control system.

12. A method for controlling at least one motorized shade, the method comprising the steps of:

providing a shade control network including at least one motorized shade, each motorized shade adapted to transmit feedback information regarding shade position or other condition associated with the shade to the shade control network;

providing a central processor connected to the shade control network for controlling the motorized shades of the shade control network, the central processor adapted to receive the feedback information from the shade control network regarding the condition or position of the motorized shades;

providing a communication buffer connected to the central processor and the shade control network, the communication buffer adapted to store feedback information from the shade control network in memory for independent transmission to the central processor;

transmitting feedback information from the motorized shades of the shade control system to the communication buffer; and

storing the feedback information for the motorized shades in memory at the communication buffer.

13. The method according to claim 12 further including the steps of:

providing a timing device for associating the shade position for the motorized shades to the time of day;

transmitting shade position information from the motorized shades to the communication buffer;

retrieving the time of day from the timing device;

storing the shade position information for the motorized shades and the associated time information in memory at the communication buffer;

transmitting the shade position information for the motorized shades and the associated time information from the communication buffer to the central processor;

creating a time-based macro program for directing the motorized shades of the shade control network to move to given positions at certain times of day based on the information transmitted to the central processor from the communication buffer; and

executing the time-based macro program.

14. The method according to claim 12 further including the steps of:

providing a link between the central processor and the communication buffer adapted for transmitting information in cycled packets of information based on a streaming protocol; and

transmitting feedback information regarding the motorized shades of the shade control network from the communication buffer to the central processor in a sequential manner using the streaming protocol such that any packet of information transmitted to the central processor that includes feedback information includes feedback information associated with only one of the motorized shades.

15. A method for controlling a shade system including at least one motorized shade, the method comprising the steps of:

providing a programmable processor having memory storage capability;

providing a controller having an actuator connected to the programmable processor;

connecting the programmable processor to a motorized shade including a rotatably supported roller tube and a flexible shade fabric windingly received by the roller tube;

programming the programmable processor to store in memory a first preset value associated with a first shade position and a second preset value associated with a second shade position; and

toggling the motorized shade between the first and second preset shade positions.

16. The method according to claim 15, wherein the programmable processor is connected to a controller having an actuator and wherein motorized shade is toggled between the first and second shade positions in response to actuation of the actuator.

17. The method according to claim 16, wherein the controller includes an LED located adjacent the actuator to provide visual indication of the shade position to which the motorized shade is toggled to.

18. The method according to claim 17, wherein the programmable processor is programmed to set the first shade position by default to either a fully-opened shade position or a fully-closed shade position.

19. A method for programming a shade control system including at least one motorized shade, the shade control system including a communication network connected to each motorized shade, the method comprising the steps of:

connecting a computer having user interface capability to the communication network of the shade control system;

transmitting at least a portion of a database of information regarding the shade control shade control system from the computer to the shade control system; and

storing the portion of the database of information received by the shade control system in a memory in the shade control system.

20. The programming method according to claim 19, wherein each of the motorized shades of the shade control system has memory storage capability, the method further comprising the steps of:

connecting a programmable processor between the computer and the shade control system;

transmitting the entire database of information regarding the shade control system from the computer to the programmable processor;

transmitting at least a portion of the database of information from the programmable processor to each of the motorized shades;

storing the portion of the database of information in memory at each of the motorized shades of the shade control system;

transmitting an acknowledgement of receipt of the database portion from each of the motorized shades to the programmable processor; and

transmitting a report from the microprocessor to the computer regarding acknowledgement by the at least one motorized shade.

21. The programming method according to claim 20, further comprising the steps of:

connecting a communication interface to the communication network of the shade control system to facilitate transfer of information with the shade control system; and

connecting the programmable microprocessor to the communication interface.

22. The programming method according to claim 21, wherein the processor is part of an integrated control system, the processor capable of controlling at least one other control system including a lighting control system in addition to the shade control system.

23. The programming method according to claim 21, further comprising the steps of:

connecting a plurality of communication interfaces to a plurality of shade control systems, each shade control system including at least one motorized shade and a communication network connected to each of the motorized shades; and

connecting the programmable processor to each of the communication interfaces.

24. The programming method according to claim 19, further comprising the step of:

directing the shade control system to move the motorized shades in a sequential manner in response to a series of user inputs to provide for unique identification of the motorized shades by the shade control system.

25. The programming method according to claim 19, further comprising the steps of:

inputting a serial number for each of the motorized shades of the shade control system into the computer;

storing the serial number for each of the motorized shades in the database of information; and

transmitting the database of information to each motorized shade.

26. The programming method according to claim 19, further comprising the steps of:

storing a serial number for each of the motorized shades of the shade control system in a memory external to the computer;

importing the serial numbers for the motorized shades of the shade control network from the external memory into the database of information in the computer; and

transmitting the database of information to each motorized shade from the computer.

27. The programming method according to claim 19, further comprising the steps of:

directing the shade control system to move the motorized shades of the shade control system to provide for visual identification of a particular shade among a reduced number of shades in a first subset of shades;

further reducing the number of shades in subsequent subsets by repeating the step of directing the shade control system to move the motorized shades with respect to subsequent subsets until a subset is formed that includes only the particular motorized shade to provide for unique identification of the particular motorized shade by the shade control system.

28. The programming method according to claim 27, wherein half of the shades of a given subset are moved to form the next subset of shades including the particular shade.

29. The programming method according to claim 19, wherein the shade control system further includes at least one controller connected to the communication network, the controller having memory storage capability for storage of database information regarding the shade control system, the method further comprising the steps of:

transmitting at least a portion of the database of information to each of the controllers of the shade control system; and

storing the portion of the database of information in memory at each of the controllers of the shade control system.